NERRS Science Collaborative Progress Report for the Period 09/1/2013 through 02/28/2014

Project Title: **Partnership for Coastal Watersheds**

Project Coordinator: Craig Cornu, South Slough NERR
Fiscal Agent: Pam Wilson, South Slough NERR
Project Start Date: Sept 1, 20012
Report compiled by: Craig Cornu
Contributing team members and their roles in the project:

Jenni Schmitt, SSNERR, Applied Science Investigator/Assistant Project Coordinator/Data Manager
* Colleen Burch-Johnson, SSNERR, Applied Science Investigator- GIS specialist (*New addition)
* Erik Larsen, SSNERR, Applied Science Investigator- Data specialist (*New addition)
* Mark Burnap, SSNERR, Applied Science Investigator- GIS intern(*New addition)
* Beth Tanner, SSNERR, Applied Science Investigator- GIS/data analysis intern (*New addition)
Jon Souder, Coos Watershed Assn. (CoosWA): Applied Science Investigator
* Emily Wright, CoosWA, Applied Science Investigator- STAR Community Assessment (*New addition)
Alexa Carleton, CoosWA: Co-collaborative lead
Alicia Helms, SSNERR: Applied Science Investigator
Adam Demarzo, SSNERR: Applied Science Investigator
David Sutherland, University of Oregon: Applied Science Investigator
Chris Claire, Oregon Department of Fish and Wildlife: End User Representative
Members of the Partnership for Coastal Watersheds Steering Committee and specific project subcommittees (Coos Estuary Inventory Project, Action Plan Implementation; Estuary Monitoring Tools; and Coordinating subcommittees): End User Representatives and Technical Advisors

A. Progress overview

The overall goal of the Partnership for Coastal Watersheds (PCW) Phase 2 project is to apply lessons learned from the first phase of the PCW to:

- Provide for our community the tools with which to understand long-term environmental and socioeconomic change in our watersheds and communities including the expansion of South Slough NERR's estuarine water quality network to the Coos estuary in partnership with local tribes, the facilitation of a Coos estuary hydrodynamic model, and the development of a suite of environmental and socioeconomic indicators for the community.
- Characterize and model specific community-relevant attributes associated with the:
    1) Local effects of climate change;
    2) Local effects of human activities and land use changes; and
    3) Cumulative effects of changes our community makes as we work towards the community vision by implementing the Partnership Action Plan.

During this reporting period the Partnership project subcommittees (Coos Estuary Inventory Project; Action Plan Implementation; Coos Estuary Monitoring Tools; and Partnership for Coastal Watersheds Coordinating subcommittees) made progress on a number of fronts and experienced temporary setbacks in others.

Progress was made by PCW subcommittees in the following areas (see details in the next section):

1. Several DRAFT chapters of the environmental assessment portion of the Coos Estuary Inventory have been completed (download them here). We hope to demonstrate significant progress on subsequent chapters (notably water quality) by the next meeting of the Coos Estuary Inventory Project subcommittee (March 31, 2014). Likewise, the socio-economic assessment portion of the Inventory will largely be completed by the next meeting and by then significant progress will be made on a STAR (Sustainability Tools for Assessing and Rating communities) community assessment for the Coos Bay community.
2. We've expanded the membership of the Action Plan Implementation subcommittee to include new members, especially those associated with socio-economic project backgrounds to balance the group with mostly environmental/conservation oriented backgrounds. The newly energized group selected priority actions from which to develop a suite of both environmentally and socio-economically- oriented projects.
3. Likewise with the PCW Coordination subcommittee, project facilitators are reaching out to the community to expand the group's membership to include community members with the ability to "think big". As a starting point, the group is taking initial steps towards developing an outreach plan for the Partnership for Coastal Watersheds and its individual projects.
4. Those responsible for the Coos Estuary Monitoring Tools tasks have completed the deployment of all System-Wide Monitoring Program data sondes in the Coos estuary and have deployed additional loggers to help validate the Coos estuary hydrodynamic model.

Temporary setbacks were as follows (see details in the next section):

1. The Oregon International Port of Coos Bay is no longer participating in the PCW, despite facilitators' and other stakeholders' efforts to convince them otherwise (see more details in the next section). This setback is more political than functional. The Port's absence from the Coos Estuary Inventory Project subcommittee represents a minor loss of stakeholder perspective but will not affect the group's ability to complete the project.
2. After initial deployment and subsequent data download of the Solinst LTC Junior loggers we're using to collect data for validating the University of Oregon's hydrodynamic model of the Coos estuary, our technician could not calibrate the loggers' salinity sensor. Time was lost troubleshooting the issue and ultimately sending the loggers back to the manufacturer. The loggers are being returned with instructions to calibrate the loggers using a method not included in the logger users' manual- appropriate calibration solutions have been sent as well.

Also during this reporting period, we submitted a request for a no-cost extension which was approved. The revised project end date is June 30, 2015.

B. Working with intended users

Members of the Partnership for Coastal Watersheds Partnership Steering Committee (PSC) and the associated project-specific subcommittees include both intended users and intended user representatives.

Coos Estuary Inventory Project Subcommittee

During this reporting period, project coordinator and assistant coordinator, Craig Cornu and Jenni Schmitt (SSNERR), continued to work with the Coos Estuary Inventory Project subcommittee and Jon Souder (Coos Watershed Association) to plan and develop the Coos Estuary Inventory.

On October 2, 2013, we convened the second Coos Estuary Inventory Project subcommittee meeting at which we led a discussion of the project's geographic scope and presented incomplete DRAFT mock-ups of the Inventory, both in response to the subcommittee's recommendations from the previous meeting. Go here to download the PowerPoint slides and here to download meeting notes.

As you may recall, the Coos Estuary Inventory project will provide the vital foundation for a much needed revision of the woefully outdated Coos Bay Estuary Management Plan, which defines land uses in the estuary and surrounding lands. This project has the support of key community stakeholders, including the Coos County Planning Department (which leads the revision of land use planning ordinances), the Coos County Board of Commissioners, the City of Coos Bay, several local development/business interests, in addition to the state's land use planning agency, Department of Land Conservation and Development.

The Coos Estuary Inventory also provides the foundation for additional community projects:

1) A climate change vulnerability assessment (and ultimately adaptation plan) for the Coos estuary and surrounding communities; and

2) A long-term ecological and socio-economic indicators program for the Coos estuary and surrounding communities.

The environmental attributes side of the Inventory will comprise 13 chapters, the majority of which include:

1) An overview of the status and trends of the attribute being described (e.g., clams and native oysters, fish, water quality…etc.) which includes a description of data sources, any limitations that may be associated with summarizing the data (a very important feature for many of our more skeptical stakeholders), and identification of key data gaps;

2) An overview of the likely effects that climate change are expected to have on the attributes described in the chapter; and

3) A data summary for each of the attributes described in the chapter.

The socio-economic side of the Inventory will include a census-based socio-economic assessment for Coos Bay area (communities most closely associated with the Coos estuary) and a community indicators assessment such as a STAR (Sustainability Tools for Assessing and Rating communities) assessment or the Ford Family Foundation's Community Vitality program. Both were presented by Coos Watershed Association's Jon Souder who recommended the STAR community assessment. Souder's recommendation was supported by the subcommittee.

We closed the meeting with a discussion of the project timeline, including talking about SSNERR's intention to add several part time staff members and interns to help complete Inventory tasks.

We mentioned in the last progress report having had discussions with the representatives from the Oregon International Port of Coos Bay about the motives behind the Coos Estuary Inventory Project and the membership of the Inventory project subcommittee and the Partnership Steering Committee. We described trust issues that go beyond the Inventory project and the Partnership for Coastal Watersheds which SSNERR management and staff, Coos Watershed Association management and staff, and several key stakeholders attempted to worked through with Port staff. In the end, Port staff let us know they would decline continuing as participants in the PCW and did not need us to keep them apprised of the project's progress or outcomes. So they will no longer participate as members of the Coos Estuary Inventory Project subcommittee.

We mentioned in our last report that the PCW creates opportunities for us to work on some long-standing issues that might not otherwise get addressed (which is true), but in this case the immediate outcome is not what we had hoped. The Port staff's change of heart has surprised and puzzled PCW facilitators, PCW stakeholders, and others in the community because by withdrawing all participation in a process they apparently don't trust, the Port staff has unnecessarily given up any chance of helping control the project's outcome. We consider this unfortunate and unprecedented situation with Port staff to be still unresolved and are keeping the lines of communication open with Port staff and their Board of Commissioners.

The next Coos Estuary Inventory Project subcommittee meeting was held January 29, 2014 to allow project facilitators to report on progress with the Inventory and request feedback from the subcommittee at this early stage in its development.

At this meeting we introduced the two new SSNERR staff members recently recruited to work on the Inventory, Colleen Burch Johnson (GIS specialist), and Erik Larsen (data specialist), both working on one year temporary, half-time appointments. We also have two interns working on the project, Beth Tanner (Oregon State University- assistance with data analyses and data summary writing), and Mark Burnap (Oregon State University- assistance with GIS tasks).

The environmental assessment side of the meeting included SSNERR project coordinators presenting the finalized Inventory project boundaries and presenting three DRAFT environmental assessment chapters for review. Go here to download the PowerPoint slides, here to download meeting notes, and here to download the DRAFT chapters presented to the subcommittee at the meeting. We received extremely helpful and positive comments from subcommittee members on the DRAFT chapters and were given the green light to continue on the path we've established.

On the socio-economic side, Jon Souder discussed the progress he's made on the socio-economic assessment. Jon offered an outline of topics covered in the socio-economic assessment and went over several that required some guidance from subcommittee members. These topics included land owner fragmentation (including small parcels along the estuary and rivers), submerged land ownership, "zombie" parcels (e.g., wetlands historically sub-divided into plats for housing developments which are often bought by out of the area landowners who later discover the land cannot be accessed or built upon), wetland mitigation sites, and demographic changes to the community. Jon also discussed progress made on the STAR communities assessment by handing out a sheet showing the completion status of each of the sustainability metrics completed by his assistant on this part of the project, Emily Wright (working remotely from Wisconsin as a former CoosWA employee on contract). The subcommittee gave Jon the feedback he needed and the group agreed that the next meeting, March 31, 2014, would be mostly focused on discussing progress made on the socio-economic part of the Inventory since the group feels that's such a critical component of the Inventory.

Action Plan Implementation Subcommittee

During this reporting period, project co-collaborative lead Alexa Carleton (CoosWA) worked to develop subcommittee membership, reached out to new members in the community for advice and direction, and convened the second and third Action Plan subcommittee meetings on December 11, 2013 and February 18, 2014. The goal of these meetings was to refine the process that this subcommittee will use for identifying, prioritizing, and developing projects that fulfill the vision in the Phase 1 Action Plan. Highlights from the meetings were as follows:

December 11, 2013 meeting

Action prioritization:

- Each of the eight participants chose two actions they considered most important from the Priority Actions table for which the subcommittee could then develop relevant projects.
- Once all actions were compiled on a flip chart, participants voted to further narrow down the choices. From this process, three priority actions/groups of actions emerged:

    1. Educate the community about human impacts on the watershed; encourage best management practices and seek watershed restoration projects with landowners and managers (actions 16 and 33)

2. Continue improvement of salmon habitat passage barriers; address stream habitat issues identified in the AHI (actions 4 and 26)
3. Encourage invasive species control through county ordinances; address spread of forest disease and invasive species (actions 35 and 27)

Outcome: subcommittee decided that these priority actions were biased towards the natural resource sector and that we should complete a similar prioritization process for social and economic-themed actions.

Tasks to complete for next meeting:

- Separate actions into social, economic, and environmental; send to subcommittee
- Recruit additional community members to represent the social and economic sectors

Download the 12/11/13 Action Plan subcommittee meeting notes here.

February 18, 2014 meeting

Socio-economic action prioritization

- Eight participants, including two new guests who represented the social and economic sectors, discussed the general socio-economic challenges/needs in the Charleston area.
- Participants discussed the different options for moving forward on developing projects. Two options emerged: choose actions that include a mix of social, economic, and environmental components, or pick several different projects in each sector to ensure that all sectors are represented.
- Subcommittee decided to prioritize separate actions within each of the three sectors. In pairs, participants chose two actions in each category; the whole group then used dot voting to further narrow down these actions.

Outcome: subcommittee identified three priority economic actions and two priority social actions:
Economic:

- **Priority 1**: Identify ways to make the waterfront more appealing to new businesses, investors and visitors (Action # 9)
- **Priority 2:** Work with Charleston community to increase opportunities for ecotourism and agritourism (Action # 7)
- **Priority # 3:** Raise awareness among businesses on the marketing advantages of local markets and products and connect businesses to marketing opportunities (Action #75)

Social:

- **Priority 1:** Complete the OR coast trail from Empire to Charleston; Extend dedicated bike lane along Cape Arago highway and Seven Devils Rd; Work to improve walkways and crossings along Cape Arago Hwy in Charleston (Actions # 110/111/128)
- **Priority 2**: Encourage and facilitate community projects such as parks, bike paths and community centers (Action #73)

Topics for next meeting in March: which of the prioritized actions to move forward on, how/when to involve project partners, how to seek funding.

Download the 2/18/14 Action Plan subcommittee meeting notes here.

Partnership for Coastal Watersheds Coordination subcommittee

During this reporting period, project co-collaborative lead Alexa Carleton (CoosWA) worked to develop the membership of the Coordination subcommittee and convened the group's second meeting on February 13, 2014. Highlights from the meeting were as follows:

- Recruited an extra participant to help group develop an outreach strategy
- The seven participants discussed progress on other PCW subcommittees, the various roles that the Coordination subcommittee could play, and potential new members to recruit to this subcommittee to make it more representative of the community
- General consensus was that one of this group's primary tasks should be to reach out to the community and address misconceptions about the Partnership for Coastal Watersheds

Action items to complete before the next meeting in April:

- Draft an "elevator speech" for each subcommittee; refine via email before next meeting
- Draft a FAQ section about what the PCW is and isn't; refine via email before next meeting
- Draft a PowerPoint outline for a presentation that can be given/tailored to different community groups; refine via email before next meeting

Download 2/13/14 Coordination subcommittee meeting notes here.

Estuary Monitoring Tools

During this reporting period, collaboration among technical partners and end users has continued "organically" to facilitate progress on tools development. We have not felt the need to formalize the group responsible for establishing the monitoring tools. Partners and end users include University of Oregon hydrodynamic model scientists, graduate students and faculty at the Oregon Institute of Marine Biology, technicians and divers from the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians, technicians from the Coquille Indian Tribe, and representatives from the Oregon International Port of Coos Bay (participating at this point to answer simple questions about shoreline structures), US

Coast Guard, Oregon Department of Transportation, Coos Bay Ship Pilots Association, and NOAA National Geodetic Survey.

In October 2013 we completed the deployment of the additional four YSI EXO2 water quality data sondes that, combined with three YSI sondes operated and maintained by local tribes and SSNERR's five existing sondes in South Slough, effectively extends our System-Wide Monitoring Program to now include the entire Coos estuary (a total of 12 water quality monitoring stations). Download map here.

SSNERR's facilitation of University of Oregon scientists' development of a Coos estuary circulation model has continued during this reporting period and has included the deployment of a series of Solinst water level, temperature and salinity loggers and an acoustic doppler current profiler (ADCP). These deployments have also required SSNERR staff to secure a series of required permissions for the use of various structures in the estuary (for anchoring instruments). We deployed all the loggers in September 2013 and the ADCP in November 2013 (download map here). This work is conducted under the direction of UO's Dr. Dave Sutherland who is the lead scientist developing the Coos estuary hydrodynamic model.

In November 2013, after the initial data download of the Solinst loggers, we encountered a problem with the loggers. Our technician could not calibrate the loggers' salinity sensor. Since then we have lost a considerable amount of time trouble-shooting this issue (which applies to all eight loggers). We sent the loggers back to the manufacturer who has just recently offered a solution to the problem, which involves using a calibration technique not included in the logger users' manual. The manufacturer is sending the loggers back to us with the appropriate calibration solutions. We anticipate all eight loggers will be re-deployed by the end of April 2014.

C. Progress on project objectives for this reporting period:

- Complete a draft of the Coos Estuary Inventory Project ready for review by the subcommittee- to include a significantly more robust socioeconomic assessment of the Coos Bay area.

  We were not able to finish a complete draft of the Coos Estuary Inventory during this reporting period and are now wondering what we were thinking when we articulated this ambitious goal. We've completed three draft chapters of the 13 chapter environmental assessment portion of the Inventory and are well into the fourth chapter the Inventory team is tackling collectively due to its size and complexity: water quality in the Coos estuary.

  The ambitious (stakeholder-driven) nature of the Coos Estuary Inventory Project, being implemented along with the other Partnership project elements, has required us to acquire supplemental funding to support additional personnel needed to complete the project and to request a no-cost grant extension to June 30, 2015 which was just recently granted.

- Complete the deployment of all four new Coos estuary system-wide water quality monitoring stations. And the station at the McCullough Bridge *may* also be outfitted with real-time telemetry equipment.

  We have completed the deployment of all four new Coos estuary system-wide water quality monitoring stations. We have not yet outfitted the McCullough Bridge station with real-time telemetry equipment, though we do have plans in summer 2014 to determine the elevation relative to NAVD 1988 of the water level sensor at that station. Once outfitted with a functional telemetry system, water level at that station will be made available online to anyone and will be particularly useful to Coos Bay shipping pilots for whom this station will provide their first real-time tide level information for the Coos estuary shipping channel.

- Complete the deployment of all loggers associated with validating the Coos estuary hydrodynamic model, including at least one Acoustic Doppler Current Profiler (ADCP) (with another ADCP possibly to be provided by the University of Oregon scientists).

  We have completed the deployment of all loggers associated with validating the Coos estuary hydrodynamic model, including one ADCP (the University of Oregon ADCP is no longer available). We encountered a calibrating issue with the Solinst loggers which, after some effort locally and at the manufacturer's lab, has been resolved. The loggers will be re-deployed by the end of April 2014.

- Convene at least one meeting of the Estuary Monitoring Tools and Indicators Subcommittee and collect feedback about the tools we're developing.

  We have not felt the need to formally convene an Estuary Monitoring Tools and Indicators subcommittee meeting because the informal, ad hoc nature of the communications we've had with the technical partners and advisors we've been relying on is functioning effectively. That said, it's likely that in the next reporting period, the Coordinating subcommittee will play a role facilitating a meeting among three science teams interested in conducting similar research in the Coos estuary. One team, David Sutherland's (University of Oregon), is already engaged in two Coos estuary projects (hydrodynamic model and a dissolved oxygen spatial variability assessment). Others from Oregon State University have plans to engage in additional hydrologic modeling and estuarine area mapping. The meeting goals will be to simply ensure the work is well coordinated and that opportunities for collaboration and data sharing are not lost.

- With the help of the comments and edits offered by the Action Plan Implementation subcommittee, complete a revised edition of the PCW Phase 1 Action Plan.

  We have completed a revised edition of the PCW Phase 1 Action Plan which is the document currently being used by the Action Plan Implementation subcommittee to develop projects from priority actions articulated in the plan.

- SSNERR staff to complete a second edition of the State of the Watersheds assessment.

  SSNERR staff has focused its efforts on developing the Coos Estuary Inventory which incorporates and expands on information found in the State of the Watersheds assessment.

- The Action Plan Implementation subcommittee will have several projects under development that address priority actions listed in the PCW Phase 1 Action Plan.

  The Action Plan Implementation subcommittee lost some of its early momentum with the departure of the Coos Watershed Association's Bessie Joyce from the project. Under the able leadership of the Coos Watershed Association's Alexa Carleton, the subcommittee is now in the early stages of developing several projects that address priority actions listed in the PCW Phase 1 Action Plan. The recently approved no-cost grant extension will give the group additional time to develop and begin to implement projects.

- The Partnership for Coastal Watersheds Coordination subcommittee will have developed an outreach plan, implemented outreach actions that helps more people in the community to understand and support the work of Partnership Steering Committee members, and will have convened the Partnership Steering Committee to report on the status of the subcommittees' project. The Coordination subcommittee may even have developed a strategic plan for the PCW that identifies what the group wants to do beyond the current projects.

  The PCW Coordination subcommittee lost some of its early momentum with the departure of the Coos Watershed Association's Bessie Joyce from the CoosWA and the project. Like the Action Plan Implementation subcommittee, Alexa Carleton is moving the PCW Coordination subcommittee forward once again, developing its membership, facilitating the group's work to define its role in the PCW, and starting to take on some outreach-related tasks that will likely lead to the development of an outreach plan. The recently approved no-cost grant extension will give the subcommittee the additional time it needs to develop its membership and become the strategic-thinking/outreach arm of the Partnership for Coastal Watersheds that it was designed to be.

Project objectives for the next six months

- Inventory: The majority of Coos estuary Inventory chapters will be completed to at least the first draft stage; most completed draft chapters will have been reviewed by technical advisors or will be under technical review.

- Coos Estuary Monitoring Tools: Solinst loggers will be re-deployed and fully functioning; temperature, water level and salinity data, and water current direction and speed data will begin to be integrated with University of Oregon scientists' hydrodynamic model.

- Action Plan Implementation: One or more projects will be under development; project partners will be identified and integrated into the project(s); funding proposals will be developed as needed and appropriate.

- Partnership for Coastal Watersheds Coordination: Outreach plan draft will be completed; funding for outreach will be identified and proposal(s) developed; messages developed and deployed by Partnership Steering Committee members and others. PCW Coordination subcommittee members will have facilitated coordination meeting among University of Oregon and Oregon State University researchers.

D. Benefit to NERRS and NOAA: This project is designed to directly serve/benefit the communities of North Bend and Cos Bay, Oregon by providing relevant environmental and socio-economic information, implementing needed projects, and continuing to facilitate productive discussion among the disparate segments of our communities. To the extent that the processes we're using to reach our project goals are applicable to other NERRs (and associated coastal communities), and inform the implementation and evaluation of NOAA programs, this project may provide additional, more far-reaching benefits to additional audiences.

E. Additional Information: Nothing additional to report.